Attorney Docket No. 24215

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Idan SOBOL   Attorney: GMN

International application No.: PCT/I198/00403

Serial No. 09/529,348

International Filing Date: 24 August 1998 (24.08.98)

Filed: April 13, 2000

For: **DEVICE FOR THE GENERATION AND USE FOR MULTI-LAYERED TEXT**
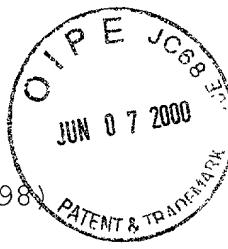
TRANSMITTAL LETTER

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

        Submitted herewith for filing in the U.S. Patent and Trademark
Office is the following:
(1)   Transmittal Letter
(2)   Copy of Notification of Missing Requirements Under U.S.C. 371
(3)   Response to Notification of Missing Requirements
(4)   Executed Declaration and Power of Attorney
(5)   Verified Statement Claiming Small Entity Status
(6)   Request for Refund for filing fee as a small entity
(7)   Check No. 12924 $65.00 for Statutory Surcharge for the
      late filing of the Declaration and Power of Attorney as a
      small entity.
(8)   Copy of Check No. 12716 for $936 Government Filing Fee as a
      large entity.
(9)   Copy of stamped Postcard dated April 13, 2000

     The Commissioner is hereby authorized to charge any deficiency
or credit any excess to Deposit Account No. 14-0112.

                                    Respectfully submitted,

                                    NATH & ASSOCIATES, PLLC

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<u>BOX PCT</u>

ATTORNEY'S DOCKET NO: 24215

U.S. DEPARTMENT OF COMMERCE, PATENT AND TRADEMARK OFFICE	DATE: *13* April 2000 (*13*.04.2000)
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371	U.S. APPLN. (if known): Not Yet Assigned **09/529348**

INTERNATIONAL APPLICATION NO.: PCT/IL98/00403	INTERNATIONAL FILING DATE: 24 August 1998 (24.08.98)	PRIORITY DATE CLAIMED: 15 October 1997 (15.10.97) 21 May 1998 (21.05.98)

TITLE OF INVENTION: **DEVICE FOR THE GENERATION AND USE OF MULTI-LAYERED TEXT**

APPLICANT(S) FOR DO/EO/US: SOBOL, Idan

Applicant hereby submits to the Unites States Designated/Elected Office (DO/EO/US) the following items and other information:

1. _x_   This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.

2. __   This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.

3. _x_   This express request to begin national examination procedures (35 USC 371(f)) at any time rather than delay examination until the expiration of the time limit set in 35 USC 371(b) and PCT Articles 22 and 39(1).

4. __   A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.

5. _X_ A copy of the International Application as filed (35 U.S.C. 371(c)(2)):

     a. _X_   is transmitted herewith (required only if not transmitted by the International Bureau).
     b. ___   has been transmitted by the International Bureau.
     c. ___   is not required, as the application was filed in the United States Receiving Office (RO/US)

6. __   A translation of the International Application into English (35 U.S.C. 371(c)(2)).

7. _X_   Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))

     a. __   are transmitted herewith (required only if not transmitted by the International Bureau).
     b. __   have been transmitted by the International Bureau.
     c. __   have not been made; however, the time limit for making such amendments has NOT expired.
     d. _X_   have not been made and will not be made.

8. __ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).

9. __ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).

10. __ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

ITEMS 11. TO 16. BELOW CONCERN OTHER DOCUMENT(S) OR INFORMATION INCLUDED:

11. __   An Information Disclosure Statement under 37 CFR 1.97 and 1.98.

12.__   An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.

13. __   A **FIRST** preliminary amendment.
     __   A **SECOND** or **SUBSEQUENT** preliminary amendment

14. __   A substitute specification.

15. __   A change of power of attorney and/or address letter.

16. _X_   TRANSMITTAL FORM; FEE CALCULATION; INTERNATIONAL PUBLICATION WO 99/19813; INTERNATIONAL PUBLICATION DATE 22 April 1999; APPLICATION CONSISTING OF 21 PAGES INCLUDING; 1 COVER SHEET CONTAINING THE ABSTRACT; 16 PAGES TEXTUAL SPECIFICATION, 3 PAGES OF 21 CLAIMS; 1 SHEET DRAWINGS (2 FIGURES); PCT/IPEA/416 NOTIFICATION OF TRANSMITTAL OF INTERNATIONAL PRELIMINARY EXAMINATION REPORT; PCT/IPEA/409 INTERNATIONAL PRELIMINARY EXAMINATION REPORT; UNEXECUTED INVENTOR'S DECLARATION; PCT/IPEA/408 WRITTEN OPINION DATED 19 JULY 99; REPLY TO WRITTEN OPINION DATED 26 SEPTEMBER 1999; REPLY TO WRITTEN OPINION DATED 26 SEPTEMBER 1999; PCT/ISA/210 INTERNATIONAL SEARCH REPORT.

ATTORNEY'S DOCKET NO: 24215

U.S. APPLICATION NO. (if known) 09/529348	INTERNATIONAL APPLICATION NO. PCT/IL98/00403	DATE: 13 April 2000 (1304.2000)

	CALCULATIONS	PTO USE ONLY
17. x The following fees are submitted:		
Basic National Fee (37 CFR 1.492(a)(1)-(5): Search Report has been prepared by the EPO or JPO:.......$840.00	$ 840.00	
International preliminary examination fee paid to USPTO (37 CFR 1.482)................................$670.00		
No international preliminary examination fee paid to USPTO (37 CFR 1.482) but international search fee paid to USPTO (37 CFR 1.445(a)(2)).....................$760.00		
Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO....................$970.00		
International preliminary examination fee (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2)-(4)...............................$ 96.00		
ENTER APPROPRIATE BASIC FEE AMOUNT =	$ 840.00	

Surcharge of **$130.00** for furnishing the oath or declaration later than ___ 20 ___ 30 months from the earliest claimed priority date (37 CFR 1.492(e)).	$	

CLAIMS	NO. FILED	NO. EXTRA	RATE		
TOTAL	21 -20=	1	X $ 18.00	$ 18.00	
INDEPENDENT	4 - 3=	1	X $ 78.00	$ 78.00	
Multiple dependent claims(s) (if applicable)			+ $260.00	$ 0.00	
TOTAL OF ABOVE CALCULATIONS =				$ 936.00	
Reduction by ½ for filing by small entity, if applicable. Verified Small Entity statement must also be filed. (Note 37 CFR 1.9, 1.27, 1.28).				$ 0.00	
SUBTOTAL =				$ 936.00	
Processing fee of **$130.00** for furnishing the English translation later than ___ 20 ___ 30 months from the earliest claimed priority date (37 CFR 1.492(f)). +				$ 0.00	
TOTAL NATIONAL FEE =				$ 936.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). $40.00 per property +				$ 0.00	
TOTAL FEES ENCLOSED =				$ 936.00	
			Amount to be: refunded	$	
			charged	$	

ATTORNEY'S DOCKET NO: 24215

U.S. APPLICATION NO. (if known) 09/529348	INTERNATIONAL APPLICATION NO. PCT/IL98/00403	DATE: *13* April 2000 (*13*.04.2000)

a. __X__   One check in the amount of $936.00 to cover the above fees is enclosed.

b. ___   Please charge my Deposit Account No. 14-0112 in the amount of $_____ to cover the above fees. (A duplicate copy of this sheet is enclosed.)

c. __X__   The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 14-0112.

NOTE: **Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed to request that the application be restored to pending status.**

Send All Correspondence To:

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Registration Number 26,965

Rev. 02/98

-3-

Applicant: Idan SOBOL   Atty Docket No. 24215

Serial No._____   Filed: April 13, 2000

'A'
'א'

For: **DEVICE FOR THE GENERATION AND USE OF MULTI-LAYERED TEXT**

<u>VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY STATUS
(37 CFR 1.9(F) AND 1.27(C) - SMALL BUSINESS CONCERN</u>

I hereby declare that I am:

√ ( )   the owner of the small business concern identified below
(X)   an official of the small business concern empowered to act on
         behalf of the concern identified below:

NAME OF CONCERN: **MULTITEXT LTD.**
ADDRESS OF CONCERN: Ben-Yehuda Street 142, 63402 Tel Aviv, ISRAEL

         I hereby declare that the above-identified small business concern
qualifies as a small business concern as defined in 13 CFR 121.3-18, and
reproduced in 37 CFR 1.9(d) for purposes of paying reduced fees under
Section 41(a) and (b) of Title 35, United States Code, in that the number
of employees of the concern, including those of its affiliates, does not
exceed 500 persons. For purposes of this statement (1) the number of
employees of the business concern is the average over the previous fiscal
year of the concern of the persons employed on a full-tim, part-time, or
temporary basis during each of the pay periods of the fiscal year, and (2)
concerns are affiliates of each other when either, directly or indirectly,
one concern controls or has the power to control the other, or a third party
or parties controls or has the power to control both.

         I hereby declare that rights under contract or law have been conveyed
to and remain with the small business concern identified above with regard
to the invention entitled **DEVICE FOR THE GENERATION AND USE OF MULTI-LAYERED
TEXT** by inventor(s) Idan SOBOL described in
         ( )   the specification filed herewith
         (X)   Application Serial No.   filed April 13, 2000
         ( )   Patent No.   issued

         If the rights held by the above-identified small business concern are
not exclusive, each individual, concern or organization having rights to the
invention is listed below* and no rights to the invention are held by any
person, other than the inventor, who could not qualify as a small business
concern under 37 CFR 1.9(d) or by any concern which would not qualify as a
small business concern under 37 CFR 1.9(d) or a nonprofit organization under

37 CFR 1.9(e). *NOTE: Separate verified statements are required from each
named person, concern or organization having rights to the invention
averring to their status as small entities. (37 CFR 1.278)

Full Name_____

Address_____
_____

( ) Individual   ( ) Small Business   ( ) Nonprofit Organization

Page Two   Docket No. 24215

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

Name of Person Signing: X _IDAN SOBOL_

Title of Person Signing X _DIRECTOR_

Address of Person Signing: X _BEN YEHUDA - 141 - TEL-AVIV_

Signature X _____ Date X 30/4/2000
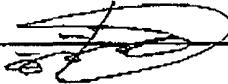
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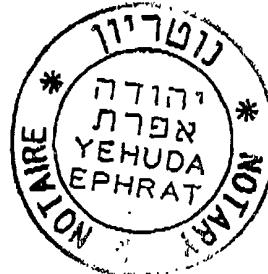
Device for the Generation and Use of Multi-layered Text

FIELD OF THE INVENTION

The present invention is in the general field of text manipulation.

BACKGROUND OF THE INVENTION

5   Texts displayed for reading by means of currently available techniques are "flat" texts. In other words, any alteration in the text involves deleting a letter, word, sentence or paragraph and replacing them with a different letter, word, sentence or paragraph, or adding text and integrating it into the basic text. As a result, the display or printing of the
10   result constitutes effectively, a new text. The displayed or printed result does not preserve or reflect the change and development of the basic text.

In many applications, it is desired to reflect information expressed in several dimensions, e.g. the text that is relevant to specific date or period. Typical example being the law text. The Law undergoes revisions from
15   time to time, and an advocate involved in a lawsuit that refers to events that had occurred at a given period in the past should, preferably, have a convenient means for reviewing the language of the law and regulations that were relevant to the specific dates under consideration. The advocate is not interested in later revisions. In other words, the user or advocate

would like to have a convenient means for displaying a given "layer" of the text which is of interest.

As will be explained in greater detail below, whilst the example above illustrated selection of layer of interest according to time dimension, (i.e.
5 displaying a layer of text which is valid for a given time), other dimensions may be of interest either separately or in combination, e.g. displaying in parliament records, only the text layer that relates to a given spokesperson.

There is, accordingly, a need in the art for providing a convenient means for introducing and displaying layers(s) of text according to selected
10 dimension or dimensions.

GLOSSARY:

There follows a glossary of terms that are used in the specification, some of which are conventional and others have been coined.

1. 15   **Dimension** – A variable applied to a text segment, which includes information on one related level. The dimensions are not limited in definition, quantity or number of assigned values per text segment. An unlimited number of dimensions and values can be defined, meaning that the dimension will serve a great number of terms. The dimensions do not
20 have to be defined for every text segment. A text segment that has no defined dimension will be a non-dimensional text segment.

There follows typical, yet not exclusive, types of dimensions:

A.   <u>Dimension of time</u> – the variable that defines the validity in time of a given text segment.

B.25   <u>Dimension of place</u> – the variable that defines the place where the text was created, occurred, is relevant to, etc.

C. Spokesperson dimension – the variable that defines the text of a given spokesperson.

D. Reference Dimension: a variable that defines the source of text that serves
5   as reference to the text segment under question. Thus, for example, when a given text segment in a patent document originates from a given scientific publication (e.g. a publication from the *IEEE* gazette), the reference dimension that is applied to the text segment in the patent is assigned with the value of the specified scientific publication.

10   Those versed in the art will readily appreciate that the dimension is by no means bound by the latter examples and, in fact, dimension may refer to any desired domain of subject. Thus, by way of non- limiting example, in a play script, a dimension may refer to passages with, say, tragic (first value) or comic (second value) connotations.

15   As will be explained in greater detail below, different dimensions may refer to the same text segment.

It should be noted that the dimension and value thereof do not necessarily form an integral part of the text. Thus, for example, the text
20   segment, "*inner-city fare is 200 shekels*", may be assigned with the value, "*Tel Aviv*" of the place dimension, without that value being part of the text segment.

A text segment may vary from the smallest unit (i.e. word), to any defined text portion (e.g. sentence, a few words, paragraph, etc). It should
25   be noted that a text segment is not confined to any particular linguistic syntax structure.

2. **Dimension Value** – A quantitative value in the definition range that a dimension receives for a text segment, or in other words, the value of a given text.

3. **Range of Values** – The range of values that a dimension may receive. This is of particular relevance to text retrieved.

4. **Status of the dimension value** – The status of the given value is either valid or invalid. Put differently, for various types of dimensions, there need not necessarily be a valid value.

5. **Text segment** – The text portion to which a dimension variable is assigned.

16. **Text** – Information that is saved in a given format, and is constructed of text segments.

7. **Word** – A chain of characters separated by dividers on both sides (valid dividers, punctuation marks or a space).

8. **Type of value continuity** – Defines the behavior of values in the dimension. The permitted types of continuity are as follows:

- **First type:** There may and must only be one valid value that is assigned to a given dimension. The beginning time (say date) of the unit of a new value will cause the former value to close on the specified date minus 1. Time dimension is an example of a first type, seeing that applying an opening date to a segment necessarily entails that the previous text segment expired one day before. Of course, the time dimension is not bound to date and may refer to a different time unit say second, minute, decade etc.

- **Second type:** There are various dimensions that may have either valid or invalid values.

Practically speaking, there are various functions that may be applied when editing a text so as to constitute a multi-layer text, including :

♦   <u>Insert</u> –A function used to insert a text segment into a certain place in the text. This requires to assign dimensions and values to the newly inserted text segment.

♦   <u>End</u> – End actually corresponds to "deletion" of text. The text is not

5   actually deleted, but rather the dimension thereof is rendered invalid.

♦   <u>Author Correction</u> – Enables to correct text (e.g. editorial errors) without affecting the dimension. In other words, the same value of a given dimension applies to the text before and after Author corrections were effected.

10   Those versed in the art will readily appreciate that the specified functions may be modified and/or others may be added, all as required an appropriate.

SUMMARY OF THE INVENTION:

15   As specified before, according to prior art, text is displayed in a "flat" (i.e. single layer) form, and reflects the last update. According to the invention, text layering is accomplished by assigning the value of a desired dimension to a selected text segment. As defined above, "dimension" stands for e.g. time, spokesman etc. Thus, by way of example, a given text

20   segment, say a passage in the law, is valid from January 1, 1983 and expires on December 31, 1992. In this example, the text dimension is the time dimension, and the period January 1, 1983 to December 31, 1992 stands for the value range of said time dimension.

Accordingly, the invention provides for a method of producing a

25   multi-level text, comprising

(a) providing a text;

(b) selecting a text segment;

(c) assigning value or value range of a text dimension to said text segment;

(d) repeating steps (b) and (c) as many times as desired.

The present invention further provides for a system that includes

5   display unit for producing multi-layer text, comprising:

(i) selector for selecting a text segment in said text;

(ii) assignor for assigning a value of a dimension to said text segment; and

(iii)memory for storing the multi-layer text

As specified above, text dimension is selected from the group that

10   includes e.g. time, place, spokesperson and reference dimension. Other
dimensions may be used, all as required and appropriate.

If desired, after generating the multi-layer text, it may be displayed
preferably (although not necessarily), in a manner where each different
value of a given text dimension is displayed in unique manner, e.g. in a

15   different color.

Having produced a multi-layer text, the invention provides multitude
manners of retrieving and displaying it.

Accordingly, there is provided for use with a multi-layer text of the
kind specified, a method for displaying a text of interest, comprising:

20   (a)   providing at least one input value or input value range of at
least one dimension; and

(b)   retrieving and displaying text segments having assigned
thereto, a value that meets said input value, or input value range.

BRIEF DESCRIPTION OF THE DRAWINGS:

For a better understanding, the invention will now be described, by way of example only, with reference to the accompanying drawings, in
5   which:

Fig. 1 illustrates a generalized block diagram of a system according to the invention;

Fig. 2 illustrates a flow chart of a generalized sequence of operation for producing a multi-layer text according to one embodiment of the invention;
10   and

Fig. 3 illustrates a flow chart of a generalized sequence of operation for retrieving and displaying text of interest in a multi-level text of the invention.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

15   Attention is first directed to Fig. 1, illustrating a generalized block diagram of a system according to the invention. As shown, the system (1) includes a processor (2) coupled to memory (4) and to display (6). The processor, memory and display may be any of commercially available devices, e.g. a conventional P.C. running Intel® based processor, and
20   running Windows® based operating system. This is, of course, an example, and any architecture which provides one or more processor coupled to at least one display device and to at least one memory, is suitable for the invention. The processor is loaded from the memory with suitable program and an input text for producing a multi-layer text according to the invention.

The generalized sequence of operation for producing the multi-layer text of the invention is illustrated in the flow chart of Fig. 2., which basically includes the following sequence:

(a) providing a text **(21)**;

5   (b) selecting a text segment **(23)**;

(c) assigning value of a text dimension to said text segment **(25)**;

(d) repeating steps (b) and (c) as many times as desired **(27,29)**.

There follows an example (Table I) which illustrates the resulting
10 multi-layer text.

No.	Text Segment	Dimen. Time	Values	Dimen Place	Values
1	Inner-city bus fare is		Begin-01.01.75 End -~		Tel-Aviv
					London
2	Two lira		Begin-01.01.75 End-31.12.79		Tel Aviv
3	Half pound		Begin-01.01.75 End – 31.12.80		London
4	One hundred		Begin-01.01.80 End-31.12.83		Tel-Aviv
5	Two		Begin-01.01.81 End-31.12.89		London

6	Half shequel		Begin-01.01.84 End-31.12.84		Tel-Aviv
7	One hundred and fifty		Begin-01.01.85 End-31.12.86		Tel-Aviv
8	1.5 new		Begin-01.01.87 End-31.12.89		Tel-Aviv
9.	Three		Begin-01.01.90 End-~		Tel Aviv
					London

TABLE I

As shown in the specified example, only two dimension types are utilized, i.e. time dimension and place dimension.

Time Dimensions	Dimension Place	Resulting Text
Begin-01.01.75 End-31.12.79	Tel Aviv	Inner city bus fare is two lira
Begin-01.01.75 End – 31.12.80	London	Inner city bus fare is half pound
Begin-01.01.80 End-31.12.83	Tel-Aviv	Inner city bus fare is one hundred lira
Begin-01.01.81 End-31.12.89	London	Inner city bus fare is two pounds
Begin-01.01.84	Tel-Aviv	Inner city bus fare is half a shequel

End-31.12.84		
Begin-01.01.85 End-31.12.86	Tel-Aviv	Inner city bus fare is one hundred and fifty shequels
Begin-01.01.87 End-31.12.89	Tel-Aviv	Inner city bus fare is 1.5 New Shequels
Begin-01.01.90 End-~	Tel-Aviv	Inner city bus fare is three New Shequels
Begin 01.01.81 End -~	London	Inner city bus fare is three pounds

TABLE II

Attention is now directed to Fig. 3 illustrating a flow chart of a generalized sequence of operation for retrieving (31) and displaying (33) text of interest in a multi-layer text of the invention. As shown, the

5   multi-layer text of the kind specified enables to retrieve and display a text of interest by, generally, following the steps:

(a) providing at least one input value, or input value range, of at least one dimension; and

(b) retrieving and displaying text segments having assigned thereto,

10   each, value or value range that meets said input value, or input value range.

Considering, the example of Table II above, an illustrative query could be *"How much does an inner-city bus ride cost on the date (03 10 1981) in a certain city"*?

The relevant input values are, of course, *03 10 1981* (time

15   dimension) and *Tel-Aviv* or *London* (place dimension). What remains to be done is to retrieve the text segment that corresponds to the specified input

values i.e. *three pound* in London (since *03 10 1981* falls in the range of *01 01 1981 -)* and *one hundred lira* in *Tel-Aviv (*since *03 10 1981* falls in the range of *01 01 1980 - 31 12 1983*).

As clearly shown in Table II, a text segment need not necessarily be assigned one value. Thus, in Fig. 2, the same text segment is associated with two values belonging to time and place dimensions, respectively.

There follows an example which will assist in clarifying the so called "second type" of continuity:

Thus, if there is dimension that shouldn't have value all the time, and it can have more than one value at given time period, like employment for example (one is not always employed), then each validity period of any value should contain start and termination of validity, for example:

The next sentence is part of text that has the employment dimension; the values are as follows:

Text	validity begins	Validity terminates
I am	01/01/1990	~
not	21/12/1995	24/02/1996
employed	01/01/1990	~
by	01/01/1990	20/12/1995
	25/02/1996	~
Firm A	01/01/1990	20/12/1995
Firm B	25/02/1996	20/03/1998
&	20/01/1998	20/03/1998
Firm C	20/01/1998	~

Now if one looks how the text is present at different periods, one can see that:

1. The text will appear as of 01/01/1990: **I am employed by firm A.**

2. The text will appear as of 01/01/1996: **I am not employed.**

3. The text will appear as of 01/01/1990: **I am employed by firm A & firm B.**

The behavior of the employment dimension values is as follows:

10

Value	01/90	02/90	12/95	01/96	02/96	03/96	12/97	01/98	02/98	03/98	04/98
Firm A	++++ +	++++ +	+++								
Firm B					+	++++ +	++++ +	++++ +	++++ +	+++	
Firm C								+	++++ +	++++ +	++++ +

As clearly shown, there is no value in the period of 21/12/1995 until 25/02/1996, and there is multi-value in the period between 20/10/1998 until 20/03/1998.

15 With this example, the idea that dimension need not necessarily have valid value at all times is demonstrated.

Those versed in the art will readily appreciate that there are multitude manners of displaying text of interest, and three out of many possible variants are discussed below.

1.   <u>Define a requested value (value range) dimension of a text segment.</u>
If, for example, a dimension of time in an updated law text is sought, the
law in force at any requested date X will be displayed. The retreival
program, based on the input values, will automatically choose all text

5   segments that correspond to the criterion of: expiration _date = X, and only
the requested segment(s) will be displayed.

2.   <u>Display text changes according to different values of the same</u>
<u>dimension.</u> If all changes made in a selected passage of text during the
period Y are of interest, the display program will automatically select all

10   segments concerning the chosen text and display them e.g. as a set of
windows, a separate window for each segment. It is, thus, possible to see
the modification of the information along the selected dimension (in this
case, the dimension of time). When the dimension is time, it is possible to
view the modifications in a synchronized display and examine the changes

15   made on a specific date throughout the text. Alternatively, it is possible to
select a diachronic display and see all the alterations made to a certain
segment of the text within a given range of dates. Other variants are, of
course, applicable.

3.   <u>A complete visual display.</u> In this case, the text will be marked with

20   a different color for each period of validity. For example: a word valid from
January 1, 1990, will be printed in color A (the color assigned to the date
January 1, 1990). A word valid from January 1, 1991 will be printed in
color B (the color assigned to the date January 1, 1991). If a word colored
in A expires on January 1, 1991, it will be marked with an overstrike in

25   color B (the color chosen for the date January 1, 1991). By following this
technique, the reader will be able to determine the date on which each word
became valid, and the date on which it ceased to be valid. By viewing the
text which is not marked with an overstrike, the reader will be able to read
the full text as at the date of the last update.

As previously mentioned, no hitherto known technique is capable of conferring additional layering information to a text (e.g. in a simple text file format), utilizing basically, although not necessarily, standard word processing functions.

5   The invention enables the recording of text and the provision of text dimensions with various values. According to these values, it is possible to define text derivatives, and dynamically display them according to user demand.

According to the invention, it is possible to review various layers 10   and dimensions that reside in the text.

The invention is by no means bound by any specific implementation for accomplishing text layers and retrieving information from the multi-layer text. Thus, by way of example, if two adjacent text segments have the same value, the system may automatically form the two segments 15   into one segment having a common value. By way of another example, the invention is not bound by any given user-interface that serves for establishing multi-layer text or for accomplishing text retrieval.

One, non limiting, example of realizing a time dimension is given below, (where date values reside between the /* ... */ signs, and wherein B 20   stands for starting date and E stands for ending date:

/*B01.07.1976-E01.01.9999*/   small business entity – "business entity which does not employ more than two employees and its turnover in all 25   business does not exceed

350,000 /*B01.07.1976-E01.08.1979*/ LIRA'S

200,000 /B01.08.1979-E01.04.1983*/

/*B01.04.1983-E01.01.1987*/800,000/*B01.08.1979-E01.01.1987*/

SHEKEL /*B01.01.1987-E01.08.1988*/50,000

/*B01.08.1988-E01.04.1989*/60,000 /*B01.04.1989-E01.01.1990*/70,000

/*B01.01.1990-E01.01.1991*/85,000

5   /*B01.01.1991-E01.10.1991*/100,000

/*B01.10.1991-E01.01.1993*/120,000

/*B01.01.1993-E01.01.1994*/130,000

/*B01.01.1994-E01.01.1995*/150,000

/*B01.01.1995-E01.01.1996*/170,000

10   /*B01.01.1996-E01.01.9999*/185,000 /*B01.01.1987-E01.01.9999*/NEW

.SHEKEL/*B01.07.1976-E01.01.9999*/,

The specified example is parsed to the following information (presented as

15   a table)

The relevant text	Effective to	Effective from
small business entity – "business entity which does not employ more than two employees and its turnover in all business does not exceed	1.1.9999	1.7.1976
350,000	1.8.1979	1.7.1976
LIRA'S	1.8.1979	1.7.1976
200,000	1.4.1983	1.8.1979
800,000	1.1.1987	1.4.1983
SHEKEL	1.1.1987	1.8.1979
50,000	1.8.1988	1.1.1987
60,000	1.4.1989	1.8.1988
70,000	1.1.1990	1.4.1989
85,000	1.1.1991	1.1.1990
100,000	1.10.1991	1.1.1991
120,000	1.1.1993	1.10.1991
130,000	1.1.1994	1 1 1993

150,000	1.1.1995	1.1.1994
170,000	1.1.1996	1.1.1995
185,000 .	1.1.9999	1.1.1996
NEW SHEKEL	1.1.9999	1.1.1987

The updated text for 1.1.1998, reads as follows:

small business entity – "business entity which does not employ more than

5 two employees and its turnover in all business does not exceed 185,000

new shekels

It should be noted that order of steps recited in the claims is provided

for convenience of explanation only and should by no means be regarded as

binding.

10   The present invention has been described with a certain degree of

particularity but it should be understood that various modifications and

alterations may be made without departing from the scope or spirit of the

invention as defined by the following claims:

CLAIMS:

1.   A   method   for   producing   a   multi-layer   text,   comprising
(a) providing a text;

(b) selecting a text segment;

5   (c) assigning value of a text dimension to said text segment;

(d) repeating steps (b) and (c) as many times as desired.

2.   The method of Claim 1, wherein said text dimension is selected from
the group that includes time, place, spokesperson and reference.

3.   The method according to Claim 1, further comprising the step of
10   displaying said multi-layer text, such that different values of a text
dimension are displayed in unique manner.

4.   The method according to Claim 3 wherein each one of said values is
displayed in a different color.

5.   The method according to Claim 1, wherein said values are assigned
15   to said text segment using at least one of the following functions: INSERT,
END, AUTHOR CORRECTION.

6.   For use with a multi-layer text, the multi-level text having text
segments assigned with values of text dimensions; a method for displaying
a text of interest, comprising:

20   (a) providing at least one input value, or input value range, of at least
one dimension; and

(b) retrieving and displaying text segments having assigned thereto,
value that meets said input value, or input value range.

7.   The method of Claim 6, wherein said text dimension is selected from
25   the group that includes time, place, spokesperson and reference.

8.   The method of Claim 6, wherein said retrieval includes displaying a requested value, or value range of a dimension of a text segment.

9.   The method of Claim 6, wherein said retrieval includes displaying text changes according different values of the same dimension.

5   10.   The method of Claim 6, wherein said retrieval includes a complete visual display.

11.   A system that includes display unit for producing multi-layer text, comprising:

(i)   selector for selecting a text segment in said text;

10   (ii)   assignor for assigning a value of a dimension to said text segment; and

(iii)   memory for storing the multi-layer text

12.   The system of Claim 11, wherein said text dimension is selected from the group that includes time, place, spokesperson, reference.

15   13.   The system of Claim 11, wherein said display device is capable of displaying said multi-layer text, such that different values of a text dimension are displayed in a unique manner.

14.   The system according to Claim 13, wherein each one of said values is displayed in a different color.

20   15.   The system of Claim 11, wherein said values are assigned to said text segment using at least one of the following functions: INSERT, END, AUTHOR CORRECTION.

16.   For use with a multi-layer text having text segments assigned with values of text dimensions, a system for displaying a text of interest,

25   comprising:

i.   receiver for receiving at least one input value or input value
range of at least one dimension; and

ii.   .   retriever for retrieving and displaying text segments having
assigned thereto, value that meets said input value, or input   value
range.

17.   The system of Claim 16, wherein said text dimension is selected
from the group that includes time, place, spokesperson and reference.

18.   The system of Claim 16, wherein said retrieval includes displaying a
requested value, or value range of a dimension of a text segment.

19.   The system of Claim 16, wherein said retrieval includes displaying
text changes according different values of the same dimension.

20.   The system of Claim 16, wherein said retrieval includes a complete
visual display.

21.   A memory medium containing a file that includes a multi-layer text
generated according to the method of Claim 1.
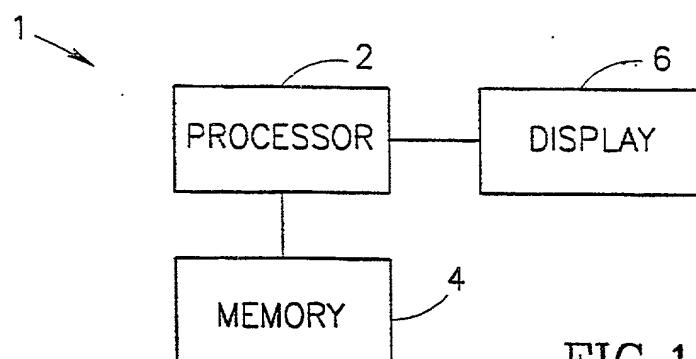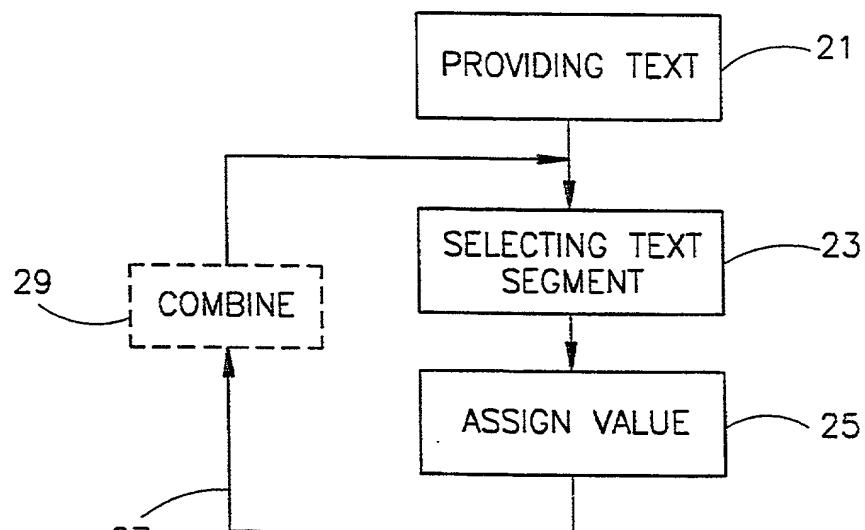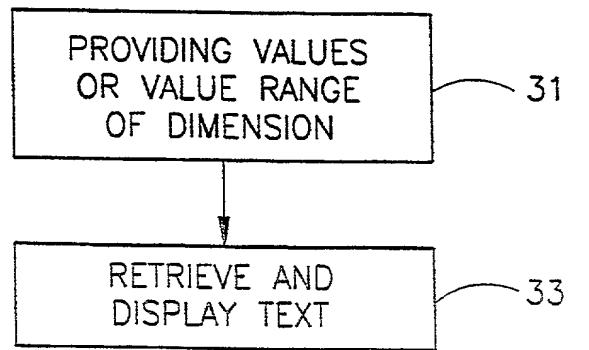
1/1

PROCESSOR — 2

DISPLAY — 6

MEMORY — 4

FIG.1

PROVIDING TEXT — 21

SELECTING TEXT SEGMENT — 23

COMBINE — 29

ASSIGN VALUE — 25

27

FIG.2

PROVIDING VALUES OR VALUE RANGE OF DIMENSION — 31

RETRIEVE AND DISPLAY TEXT — 33

FIG.3

As a below-named inventor(s), I/we hereby declare that:

My/Our residence(s), post office address(es) and citizenship(s) is/are as stated below next to my/our name(s).

I/We believe I/we am/are the original inventor, first and sole (*if only one name is listed below*) or the original, first and joint inventors (*if plural names are listed below*) of the subject matter which is claimed, and for which a patent is sought on the invention entitled:

DEVICE FOR THE GENERATION AND USE OF MULTI-LAYERED TEXT

the specification of which: (check one)

[ ] is attached hereto.

[X] was filed on _24 August 1998_, as Serial No. _PCT/IL98/00403_,
13 April 2000

and was amended on _____ 19_____ (if applicable).

We hereby state that we have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

We acknowledge the duty to disclose information which is material to the patentability of this application as defined by 37 CFR § 1.56.

We hereby claim foreign priority benefits under 35 U.S.C. § 119 of any foreign application(s) for patent or inventor's certificate listed below, and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Applications:

			Priority Claimed	
_121990_	_IL_	_15/ Oct. /1997_	[X]	[ ]
(Application No.)	(Country)	(Day/Month/Year Filed)	Yes	No
_124579_	_IL_	_21 /May / 1998_	[X]	[ ]
(Application No.)	(Country)	(Day/Month/Year Filed)	Yes	No
		_/ /_	[ ]	[ ]
(Application No.)	(Country)	(Day/Month/Year Filed)	Yes	No

We hereby appoint Gary M. Nath, Reg. No. _26,965_; Harold L. Novick, Reg. No. _26,011_; Suet M. Chong, Reg. No. _38,104_; Todd L. Juneau, Reg. No. _40,669_; Lee C. Heiman, Reg. No. _41,827_; Jerald L. Meyer, Reg. No. _41,194_; Joshua B. Goldberg, Reg. No. _44,126_; David Milligan, Reg. No. _42,893_; David R. Murphy, Reg. No. _22,751_; Paul A. Sacher, Reg. No. _43,418_; Gregory B. Kang, Reg. No. _45,273_; Scott F. Yarnell, _45,245_; Charles D. Niebylski, Reg. No. _P-46,116_; and Deborah H. Yellin, _P-45,904_ as my attorneys to prosecute this application and transact all business in the U.S. Patent and Trademark Office connected therewith.

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We hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by 35 U.S.C. § 112, first paragraph, I/we acknowledge the duty to disclose material information as defined in 37 CFR § 1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

(U.S. Application Serial No.)	(U.S. Filing Date)	(Status--patented, pending, abandoned)
(U.S. Application Serial No.)	(U.S. Filing Date)	(Status--patented, pending, abandoned)

We hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor: Idan SOBOL

Inventor's Signature X _____ Date X 30/5/2000

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